

### **REMARKS/ARGUMENTS**

New Claims 26-28 are presented for certain embodiments of the invention wherein Z is defined as a 1,2,4-triazole group, 1,3,5-triazole group, or a combination thereof, as described on page 11 of the present application. This subject matter is also believed to be novel and patentable over the teaching in the cited art.

Applicants appreciate the indication of allowable subject matter in pending Claims 3 and 4, but they also believe that there is additional patentable subject matter in the pending claims for the reasons presented below.

### **Rejections Under 35 U.S.C. §103(a)**

All pending claims (except 3 and 4) have been rejected as unpatentable over one or more combinations of cited art. Each rejection will be considered in turn after a brief discussion of the presently claimed invention and the advance in the art that it provides.

#### **Applicants' Invention:**

Applicants' claimed lithographic printing plate precursor and methods of preparing are novel and inventive because they utilize particular free radical polymerizable components that contain mercapto-substituted aliphatic, heterocyclic or heteroaromatic groups connected to the free radical polymerizable moiety. Applicants' found that the use of such compounds in negative-working radiation-sensitive compositions improves the radiation sensitivity (or photosensitivity). Such polymerizable compounds have been used in various arts previously, including paint compositions, adhesives, and the like. Non-polymerizable mercapto compounds have been used as stabilizers in various compositions, but no one had recognized that mercapto-substituted free radically polymerizable compounds ("SH monomers") could be used to unexpected advantage in lithographic printing plate compositions to achieve a previously unrecognized property. As pointed out on page 40 (last paragraph) of the specification, the use of the "SH monomers" can increase imaging sensitivity by 50-100% compared to the use of similar monomers outside of this invention.

The improvements from use of the “SH monomers” can be readily seen in reviewing the Invention Examples and Comparative Examples in the present application (pages 43-50). Example elements demonstrating the presently claimed invention were imaged at much lower energies (less than 80 mJ/cm<sup>2</sup>) compared to the higher energies used for the comparative elements (up to 350 mJ/cm<sup>2</sup>). The higher imaging energies are indicative of lower photosensitivity.

Applicants did not expect these differences or that use of the “SH monomers” would provide such significant sensitivity improvements.

#### Patentability Criteria:

The issue of patentability under Section 103 must be established by considering the “Graham factors” that, as the Supreme Court recently said, are still controlling. The “Graham factors” are 1) scope and content of the prior art, 2) the differences between the prior art and the claims, 3) the level of ordinary skill in the pertinent art, and 4) objective evidence of nonobviousness. It is not altogether clear that all of these factors have been properly considered and followed in making the rejections described in the Office Action. In particular, it is believed that the Office Action cites a publication, Kimura et al., that is not “prior art” relevant to the claimed invention.

#### Rejection I:

Claims 1, 2, 5, 6, 8, 10-12, 17-19, and 22-25 have been rejected as unpatentable over US Publication 2002/0197564 (Timpe et al.) in view of JP 11-116900 (Kimura et al.). Kimura et al. will be discussed in relation to the teaching in the machine translation that is enclosed.

The Office Action argues that Timpe et al. discloses a printing plate precursor comprising an IR-sensitive composition on a substrate that is equivalent to that claimed in this application. The IR sensitive composition of Timpe et al. is said to include at least one polymeric binder that is soluble or swellable in water or weakly alkaline solutions that are used for development, and an initiator system including an IR absorber and a compound capable of producing free radicals. The Office Action admits that Timpe et al. fails to describe radical polymerizable compounds defined by Formula (I) of the present application, but relies on Kimura et al. to supply this missing teaching.

More specifically, the Office Action argues that Kimura et al. discloses a composition containing a radically polymerizable mercaptothiadiazole derivative [0019], polymerizable monomer, and polymerization initiator. It is argued that the formula (1) meets the limitation of Applicants' formula (I) compounds when Z is a heterocyclic spacer,  $Z^1$  is  $Z^3-S-(CR^{2a}R^{2b})_c$ -arylene-,  $Z^3$  is a single bond, c is 1, and  $R^{2a}$ ,  $R^{2b}$ ,  $R^{1a}$ ,  $R^{1b}$ , and  $R^{1c}$  are hydrogen atoms. It is noted that the Kimura et al. formula (1) compound is used for imparting adhesive strength so that pretreating a metal is not necessary and durability and long term stability are present. The useful fields for the composition are as adhesives in electronic ingredients and precision instruments particularly in the field of dentistry.

The Office Action then opines that it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the mercaptothiadiazole derivatives of Kimura et al. in the IR-sensitive compositions and precursors of Timpe et al. in order to take advantage of the good adhesion properties and long-term stability of the mercaptothiadiazole derivative monomers.

The Office Action also argues that the subject matter of Claims 2 and 5 are disclosed in Kimura et al. and the subject matter of Claims 6, 8, 10-12, 17-19, and 22-25 are also described in Timpe et al.

Applicants respectfully disagree with the reasoning for unpatentability with respect to Claim 1, and by definition, all claims dependent thereon are likewise patentable.

Applicants have no argument with the relevance of Timpe et al to lithographic printing plate precursors and radiation-sensitive compositions useful therein. However, Applicants do contend that Kimura et al. is not relevant prior art under the first Graham factor and is therefore improperly cited.

The recently Supreme Court case has not disavowed the prior CAFC decisions relating to "analogous art". What the Supreme Court implied however, in *KSR Int'l. v. Teleflex Inc.* is that the prior art must be in a "relevant" or "pertinent" field so that it would be "common sense" for a person of ordinary skill to consult it. Such is not the case with Kimura et al. It is easy for a search strategy to look for a given component of a combination of components and thus find that individual component in a publication somewhere, but Section 103 still

requires that the “found” reference be pertinent to the claimed invention, not just to an individual component in a combination of components that makes up the invention. Almost every component of a combination of components is known somewhere in a publication, but the reasons or desire for putting them together to solve a problem is the essence of nonobvious invention.

More specifically, Kimora et al. is directed to dental adhesives that are useful to adhere metals, such as gold, platinum, and silver normally used in dental work, to dentin or enamel in a person’s mouth [0001], [0003], [0006], [0007], [0067], and [0068]. This adhesive advantage is achieved by using certain SH-thiadiazole polymerizable monomers in combination with other free radical polymerizable monomers in a polymerization composition [0009]. Applicants recognize that some of the monomers used in the dental adhesives of Kimora et al. are useful for improving photosensitivity in their claimed lithographic printing plate precursors. However, their usefulness in dental adhesives is not relevant to an unexpected usefulness in lithographic printing plate compositions to supply a vastly different advantage.

One can see this by considering a few simple questions:

What reasons are given in the Office Action for a person of ordinary skill in the lithographic art, as Applicants are, to consult a dental adhesive publication for improving photosensitivity? None.

Are the technologies even close? No.

Are lithographic applications suggested? No.

Has the UPSTO classified the two technologies in the same place? No.

Are the same problems addressed? No.

Is there a need for dental compositions with improved adhesion to also be more imaging sensitive? Who knows—there is nothing in Kimora et al. to suggest that they need to be. Yet, imaging sensitivity is a critical feature in lithography and for Applicants’ invention.

In order for a reference to be “analogous” prior art, the reference must be in the field of Applicants’ endeavor or, if not, it then must be reasonably pertinent to the particular problem with which Applicants are concerned, *In re Oetiker* 24 U.S.P.Q.2d 1443, 1445 (Fed. Cir. 1992) and *In re Deminski* 230 U.S.P.Q. 313 (Fed. Cir. 1986). The CAFC has also said that a reference can be

“analogous” art if “it is one which, because of the matter with which it deals, logically would have commended itself to an inventor’s attention in considering his problem”, *Wang Laboratories Inv. v. Toshiba Corp.* 26 U.S.P.Q.2d 1767 (Fed. Cir. 1993). We must assume that the “inventor” referred to by the Court is one having at least ordinary skill in the art, and is usually a person who has actually worked in the field, not merely read about it.

It is therefore clear that Kimora et al. fails the tests for “analogous” art. First of all, Kimora et al. is not in Applicants’ field of endeavor. That much is evident by a quick reading of the publication. There is not even a hint about lithography and the assignee is not a company known for lithographic technology or intellectual property.

It also fails the second test. It is not reasonably pertinent to the particular problem addressed by Applicants’ claimed invention. As pointed out above, Applicants have significantly improved imaging sensitivity, which is a constant problem in the field of lithography. In contrast, Kimora et al. is directed to improving adhesion of a metal to dentin or enamel in a person’s mouth. The two problems vastly different and there is no common sense reason a person skilled in lithography would look to Kimora et al. for any reason. There is no logical or common sense connection between the different concepts or fields of endeavor. Applicants would not be looking in the dental adhesive art to find a way to improve imaging sensitivity in lithography. If adhesion is improved in Applicants’ lithographic printing plate compositions, it is an unintended side effect. Applicants’ research aim was to improve imaging sensitivity.

As noted above, using a search engine to find some publication describing a specific chemical component (“SH monomer”) for some purpose is relatively easy in today’s technological databases. But the mere finding of that component in a publication for some purpose does not render its utility in a novel combination obvious. Unfortunately, that appears to have been approach taken in examining Applicants’ claimed invention. Kimura et al. describes the necessary compounds in chemical compositions (albeit unrelated compositions) and it is assumed that a skilled worker in lithography would naturally choose to use them and achieve a totally unexpected benefit.

The Office Action fails to provide technical, common sense reasoning as to why a skilled worker in the art would add the mercaptothiadiazole derivative of Kimura et al. to the composition and elements of Timpe et al.

Page 3 of the Office Action merely states what Kimura et al. is believed to describe, i.e. the noted derivatives. It also states that the compounds are taught in Kimura et al. for improving adhesive strength of the composition (i.e. dental composition to adhere to metals and tooth enamel). On page 4, the Office Action continues by noting that the adhesive could be used in electronic ingredients, and precision instruments where adhesives are needed.

Then, without any explanation, the Office Action immediately opines (not reasons) that it would be obvious to drop the compound of Kimura et al. into the compositions of Timpe et al. to take advantage of good adhesive properties and long-term stability from the mercaptothiadiazole derivatives. Why? What relationship does adhesive strength (which is not a primary research goal) have with imaging sensitivity?

Timpe et al. is not concerned about adhering noble metals to enamel, or anything else for that matter. The statements in the Office Action are unsupported and do not constitute required technical reasoning—they are mere opinions that one compound in dentistry (or electronic ingredients or precision instruments) might be useful in lithography. Both the Supreme Court and USPTO examination guidelines require more than mere opinions.

#### Rejection II:

Claims 1, 13-16, and 24 have been rejected as unpatentable over US Patent 6,306,555 (Shulz et al.) in view of US Patent 5,273,862 (Zertani et al.) and Kimura et al. The Office Action argues that Schulz et al. discloses a radiation-sensitive composition comprising free radical polymerizable components (including acrylates and methacrylates that are said to be known from Zertani et al.), binders, and diaryliodonium photoinitiators, and that it describes the use of this composition for preparing printing plates that are developed with organic solvents or aqueous alkaline solutions. The Office Action admits that Schulz et al. fails to disclose the monomers of Applicants' formula (I), and then argues that such monomers are disclosed in Kimura et al. as argued for Rejection I.

Similar arguments are made against the subject matter of Claims 13-16 and 24.

The Office Action then opines that it would have been obvious to a skilled worker at the time the invention was made to include the monomers of Kimura in the IR-sensitive compositions of Schulz et al. in order to provide improved adhesion and long-term stability.

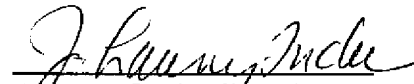
Applicants also disagree with this rejection for basically the same reasons given above in rebuttal of Rejection I. While Schulz et al. and Zertani et al. are newly cited, Kimura et al. is also cited as supplying the teaching that is missing from the other references. However, the combination of three references is just as faulty as the combination of Kimura et al. and Timpe et al. for the same reasons given above. Kimura et al. is nonanalogous art, and the Office Action has failed to provide common sense, technical reasoning as to why the mercaptothiadiazole derivatives of Kimura et al. would be put into the compositions of Schulz et al. by one skilled in the art.

The Office Action says that the compounds of Kimura et al. would be useful to improve adhesion and stability in the compositions of Schulz et al. How do we know that? Schulz et al. is concerned about providing more effective or reactive initiators. Adhesion is irrelevant. There is nothing suggested in Schulz et al. that a skilled worker needs to improve adhesion of their compositions to metals such as gold, platinum, and silver or to dental enamel. One skilled in the art reading Schulz et al. would not consult Kimura et al. for any reason. Certainly, the Office Action has not provided any technical reason to suggest otherwise as it merely describes a disclosed property of the Kimura et al. compounds in a dental application. There is no reasonable expectation that the Kimura et al. compounds would improve imaging sensitivity in the compositions of Schulz et al.

Thus, it is believed that this rejection should be withdrawn.

In view of the foregoing amendments and remarks, reconsideration of this patent application is respectfully requested. A prompt and favorable action by the examiner is earnestly solicited.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "J. Lanny Tucker", written over a horizontal line.

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If the Examiner is unable to reach the Applicant(s) Attorney at the telephone number provided, the Examiner is requested to communicate with Eastman Kodak Company Patent Operations at (585) 477-4656.